

## CLAIMS

We claim:

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1. A draft gear assembly for use with railcars having coupler members, the draft gear assembly having front and back ends and comprising:

5 a yoke having a back wall, a top wall extending from the back wall toward the front end of the draft gear assembly, and a bottom wall extending from the back wall toward the front end of the draft gear assembly;

a coupler follower positioned between the back wall of the yoke and the front end of the draft gear assembly;

10 at least one front resilient member positioned between the coupler follower and the back wall of the yoke;

at least one back resilient member positioned between the yoke back wall and the back end of the draft gear assembly;

the front and back resilient members being compressible;

15 a rear follower positioned rearward of the back resilient member;

wherein the coupler follower has a buff stroke of 4-1/4 inches and the yoke has a draft stroke of 1-1/4 inches.

2. The draft gear assembly of claim 1 wherein the yoke has a neutral position, a full draft position 1-1/4 inches forward of the neutral position, and a full buff position 3  
20 inches rearward of the neutral position.

3. The draft gear assembly of claim 1 in combination with a draft sill having front stops, the coupler follower including a pair of stop contact surfaces in contact with the draft sill front stops and a coupler bearing surface between the stop contact surfaces, at least part of the coupler bearing surface being forward of the stop contact surfaces of the  
25 coupler follower.

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4. The draft gear assembly of claim 1 in combination with a draft sill having front stops, rear stops and a draft pocket between the front stops and the rear stops, and wherein:

the rear follower is positioned against the rear stops throughout buff and draft movement of the coupler follower; and

the coupler follower is positioned against the front stops at the neutral position.

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5. The combination draft gear assembly and draft sill of claim 4 wherein the draft  
5 pocket has a length of about 24-5/8 inches.

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6. The draft gear assembly of claim 1 in combination with a draft sill having walls defining a draft pocket, wherein at least the front and back resilient members are received in the draft gear pocket, and wherein the combination is free from any housing between the draft sill walls and the front and back resilient members.

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7. The draft gear assembly of claim 1 wherein the yoke includes a top stop and a  
10 bottom stop, the coupler follower being biased against the top and bottom stops.

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8. The draft gear assembly of claim 1 further including a center rod extending from the rear follower through the back resilient member and through the back wall of the yoke,

15 wherein prior to installation on the railcar the yoke, coupler follower, front resilient member, rear follower and center rod comprise an assembly, the assembly further including a shortening member on the center rod at the rear follower, the length of the assembly from the coupler follower to the rear follower being less than 24-5/8 inches; wherein the yoke has a buff stroke;

20 and wherein after installation on the railcar the center rod is free from tension when the yoke is moving through the draft stroke and free from compression when the yoke is moving through the buff stroke.

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25 A draft gear assembly for use with a railcar having a coupler member and a draft sill with front and rear stops defining a draft gear pocket to receive at least part of the draft gear assembly, the draft gear pocket having a length between the front stops and rear stops, the draft gear assembly having front and back ends and comprising:

a yoke having a back wall, a top wall extending from the back wall toward the front end of the draft gear assembly, and a bottom wall extending from the back wall toward the front end of the draft gear assembly;

5 a coupler follower positioned between the back wall of the yoke and the front end of the draft gear assembly, the coupler follower having a forward facing stop surface;

at least one front resilient member positioned between the coupler follower and the back wall of the yoke;

at least one back resilient member positioned between the yoke back wall and the back end of the draft gear assembly;

10 a rear follower positioned rearward of the back resilient member, the rear follower having a rearward facing stop surface;

a center rod extending through the rear follower, through the back resilient member and through the back wall of the yoke;

wherein prior to installation on the railcar the yoke, coupler follower, front resilient member, back resilient member, rear follower and center rod comprise an assembly, the assembly further including a shortening member on the center rod at the rear follower, the length of the assembly between the stop surface of the coupler follower and the stop surface of the rear follower being less than the length of the draft gear pocket;

20 wherein after installation on the railcar the rear follower is positioned against the rear stops; and

wherein after installation on the railcar the yoke has a neutral position, a full draft position forward of the neutral position, and a full buff position rearward of the neutral position;

25 the center rod being free from tension when the coupler member is in the full draft position;

the center rod being free from tension and compression when the coupler member is in the neutral position; and

30 the center rod being free from compression when the coupler member is in the full buff position.

9 10. The draft gear assembly of claim ~~8~~ wherein the shortening member comprises a nut on the end of the center rod and a removable gag inward of the nut.

10 11. The draft gear assembly of claim ~~8~~ wherein the distance between the stop surface of the rear follower and the stop surface of the coupler follower is less than 24-5/8 inches prior to installation of the assembly on the railcar.

11 12. The draft gear assembly of claim ~~10~~ wherein the yoke includes top stops and bottom stops limiting forward movement of the coupler follower.

12 13. The draft gear assembly of claim ~~8~~ in combination with a draft sill having walls defining a draft pocket, wherein at least the front and back resilient members are received in the draft gear pocket, and wherein the combination is free from any housing between the draft sill walls and the front and back resilient members.

13 14. The combination draft gear assembly and draft sill of claim ~~13~~ in combination with a coupler, the coupler having a draft stroke of 1-1/4 inches and a buff stroke of at least 4-1/4 inches.

14 15. The combination draft gear assembly and draft sill of claim ~~13~~ wherein the coupler follower includes a coupler bearing surface forward of the stop surface of the coupler follower.

15 16. The combination draft gear assembly and draft sill of claim ~~13~~ wherein the length of the back resilient member is greater after installation in the draft sill than prior to installation.

Sub 17. A draft gear assembly for use with a railcar having a coupler member and a draft sill, the draft gear assembly having front and back ends and comprising:

a yoke having a back wall, a top wall extending from the back wall toward the front end of the draft gear assembly, a bottom wall extending from the back wall toward the front end of the draft gear assembly, and a yoke stop;

a coupler follower forward of the back wall of the yoke and having a forward facing surface positioned against the yoke stop;

at least one front resilient member positioned between the coupler follower and the back wall of the yoke;

at least one back resilient member positioned between the yoke back wall and the back end of the draft gear assembly;

a rear follower positioned rearward of the back resilient member, the rear follower having a rearward facing stop surface;

a center rod extending through the rear follower, through the back resilient member and through the back wall of the yoke; and

a shortening member on the center rod at the rear follower;

wherein the distance between the rearward facing stop surface of the rear follower and the forward facing stop surface of the coupler follower against the yoke stop is no more than 24-5/8 inches.

18. The draft gear assembly of claim 17 wherein the shortening member comprises a nut on the end of the center rod and a removable gag inward of the nut.

19. The draft gear assembly of claim 17 wherein the yoke includes a plurality of stops bearing against the coupler follower.

20. The draft gear assembly of claim 17 wherein the front and back resilient members provide a force damping function.

21. In combination, a draft gear assembly, a coupler and a draft sill, the draft sill having a pair of front stops and a pair of rear stops; the draft gear assembly having front and back ends and comprising:

a yoke having a back wall, a top wall extending from the back wall toward the front end of the draft gear assembly, and a bottom wall extending from the back wall toward the front end of the draft gear assembly, the yoke having a buff stroke from a neutral position to a full buff position and a draft stroke from the neutral position to a full draft position;

the back wall of the yoke being between the front stops and rear stops of the draft sill;

a coupler follower positioned between the back wall of the yoke and the front stops of the draft sill, the coupler follower having a buff stroke from the neutral position to a full buff position;

a rear follower positioned against the rear stops of the draft sill, the yoke back wall being longitudinally spaced from the rear follower;

at least one front resilient member filling the longitudinal distance between the coupler follower and the back wall of the yoke;

at least one back resilient member filling the longitudinal distance between the rear follower and the back wall of the yoke;

a coupler extending forward from the yoke, the coupler having a neutral position, a draft stroke from the neutral position to a full draft position forward of the neutral position and a buff stroke from the neutral position to a full buff position back from the neutral position;

the coupler and yoke having draft strokes such that the distance between the front face of the yoke back wall and the coupler follower decreases from the neutral spacing when the coupler is in the full draft position and the distance between the rear face of the yoke back wall and the rear follower increases from the neutral spacing when the coupler is in the full draft position;

the coupler, yoke and coupler follower having buff strokes such that the distance between the front face of the yoke back wall and the coupler follower decreases from the neutral spacing when the coupler is in the full buff position and the distance between the rear face of the yoke back wall and the rear follower decreases from the neutral spacing when the coupler is in the full buff position;

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the coupler draft stroke being 1-1/4 inch and the coupler buff stroke being at least 4-1/4 inches.

21/ 22. The combination of claim 21 wherein the coupler follower is stationary when the coupler moves in draft and wherein the coupler follower has a buff stroke of 4-1/4 inches.

22/ 23. The combination of claim 21 wherein the yoke has a draft stroke of 1-1/4 inches and a buff stroke of 3 inches.

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as 24. The combination of claim 21 further including a center rod extending through the rear follower, through the back resilient member and through the back wall of the yoke, wherein the yoke, coupler follower, front resilient member, rear follower and center rod comprise an assembly prior to installation on the railcar, the assembly further including a shortening member on the center rod at the rear follower, the length of the assembly from the coupler follower to the rear follower being less than 24-5/8 inches; and wherein after installation on the railcar the center rod is free from tension when the coupler moves through the draft stroke and free from compression when the coupler moves through the buff stroke.

24/ 25. In combination, a draft gear assembly, a coupler and a draft sill, the draft sill having a pair of front stops and a pair of rear stops; the draft gear assembly having front and back ends and comprising:

a yoke having a back wall, a top wall extending from the back wall toward the front end of the draft gear assembly, and a bottom wall extending from the back wall toward the front end of the draft gear assembly;

the back wall of the yoke being between the front and rear stops of the draft sill;

a coupler follower positioned between the back wall of the yoke and the front stops of the draft sill;

a rear follower longitudinally spaced from the yoke back wall;

at least one front resilient member filling the longitudinal distance between the coupler follower and the back wall of the yoke;

at least one back resilient member filling the longitudinal distance between the rear follower and the back wall of the yoke;

5 a center rod extending through the rear follower, back resilient member and back wall of the yoke;

a coupler extending forward from the yoke, the coupler having a neutral position, a full draft position forward of the neutral position and a full buff position back from the neutral position;

10 wherein the rear follower is positioned against the rear stops of the draft sill when the coupler is at the full buff position, at the full draft position and at the neutral position.

25/ 26. The combination of claim 24 wherein the draft gear assembly comprises an assembly prior to installation in the draft sill, the assembly further including a shortening member associated with the center rod to compress the back resilient member.

26/ 27. The combination of claim 24 wherein the coupler has a maximum draft stroke of 1-1/4 inches and a maximum buff stroke of at least 4-1/4 inches, and wherein the longitudinal distance between the front stops and the rear stops of the draft sill is 24-5/8 inches.

27/ 28. The combination of claim 24 wherein there is no housing between the resilient members and the draft sill.